



- 2 -

Q²

set of at least one mobile telephone station and a second set of at least one fixed wire telephone station. The mobile station is arranged to maintain a communication link with the apparatus. Some of the telephone stations of the first and second sets are grouped within a private network group with the apparatus controlling the communication of data units in a similar manner to that described above for the first aspect. Preferably, the telephone stations of the first and second groups each have a corresponding node registration which are HLRs for the mobile telephone stations of the first set and a data address corresponding to a second apparatus for the fixed wire telephone stations of the second set.

In the Claims

Please amend claims 1 to 34 and both claims which are numbered as claim 35 as follows:

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1.(Amended) An apparatus for controlling data unit communications between a plurality of mobile stations, each of the mobile stations having a respective maintained communication link with the apparatus, the apparatus comprising:

means for grouping at least two of the plurality of mobile stations as members of a private network group;

means for determining if a first mobile station sending a data unit and a second mobile station scheduled to receive the data unit are both members of the private network group; and

means for enabling communication of the data unit from the first mobile station to the second mobile station through the respective maintained communication links of the first mobile station and the second mobile station only if they are both members of the private network group.

2.(Amended) The apparatus according to claim 1, wherein each of the mobile stations has a corresponding Home Location Registration (HLR);

- 3 -

wherein the means for grouping at least two of the plurality of mobile stations as members of a private network group comprises means for listing the HLRs of the at least two mobile stations within a private network group table; and

wherein the means for determining if the first and second mobile stations are both members of the private network group comprises means for determining if the HLRs of the first and second mobile stations are both listed within the private network group table.

3.(Amended) The apparatus according to claim 2, wherein each of the mobile stations further has a corresponding data address and the data unit includes a data address corresponding to a desired destination mobile station as a destination address;

Q³ wherein the means for grouping at least two of the plurality of mobile stations as members of a private network group further comprises means for listing the data addresses of the at least two mobile stations within the private network group table corresponding to their HLRs; and

wherein the means for determining if the first and second mobile stations are both members of the private network group further comprises means for determining the HLR of the second mobile station by looking-up the destination address of the data unit within the private network group table.

4.(Amended) The apparatus according to claim 3, wherein the data addresses are Internet Protocol (IP) addresses.

5.(Amended) The apparatus according to claim 1, wherein each of the mobile stations has a corresponding node registration;

wherein the means for grouping at least two of the plurality of mobile stations as members of a private network group comprises means for listing the node registrations of the at least two mobile stations within a private network group table; and

- 4 -

wherein the means for determining if the first and second mobile stations are both members of the private network group comprises means for determining if the node registrations of the first and second mobile stations are both listed within the private network group table.

6.(Amended) The apparatus according to claim 5, wherein the plurality of mobile stations comprises a first set of at least one mobile station within a first cell cluster and a second set of at least one mobile station within a second cell cluster, the node registrations corresponding to the mobile stations of the first set being respective Home Location Registrations (HLRs) and the node registrations corresponding to the mobile stations of the second set all being a data address corresponding to a second apparatus; and

Q³ wherein the apparatus for controlling data unit communications further comprises means for adding a header to the data unit if the apparatus determines that the first and second mobile stations are both members of the private network group and the second mobile station has the data address corresponding to the second apparatus as its node registration, the header comprising the data address corresponding to the second apparatus as a destination address.

7.(Amended) The apparatus according to claim 6, wherein the data address corresponding to the second apparatus is an Internet Protocol (IP) address.

8.(Amended) The apparatus according to claim 1 further comprising means for determining if the data unit is of a type requiring limited access, and means for enabling communication of the data unit from the first mobile station to the second mobile station if the data unit is not of the type requiring limited access, even if the first and second mobile stations are not both members of the private network group.

9.(Amended) The apparatus according to claim 1 further comprising means for sending a bandwidth request signal prior to enabling communication of the data unit if the second mobile station has insufficient bandwidth capabilities to receive the data unit on the respective maintained communication link of the second mobile station.

- 5 -

10.(Amended) The apparatus according to claim 1 further comprising means for sending an error signal to the first mobile station if the first and second mobile stations are not both members of the private network group.

11.(Amended) An apparatus for controlling data unit communications between a plurality of mobile stations, each of the mobile stations having a respective maintained communication link with the apparatus, the apparatus comprising:

means for grouping at least two of the plurality of mobile stations as members of a private network group;

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means for determining if a first mobile station sending a data unit and a second mobile station scheduled to receive the data unit are both members of the private network group; and

means for disabling communication of the data unit from the first mobile station to the second mobile station through the respective maintained communication links of the first mobile station and the second mobile station if they are not both members of the private network group.

12.(Amended) An apparatus for controlling data unit communications between a first set of at least one mobile telephone station and a second set of at least one fixed wire telephone station, the at least one mobile station each having a respective communication link with the apparatus, the apparatus comprising:

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means for grouping at least two telephone stations of the at least one mobile telephone station and the at least one fixed wire telephone station as members of a private network group, at least one of the at least two telephone stations being a mobile telephone station;

means for determining if a first telephone station sending a data unit and a second telephone station scheduled to receive the data unit are both members of the private network

- 6 -

group; and

means for enabling communication of the data unit from the first telephone station to the second telephone station, through the respective maintained communication link of the first telephone station of the first telephone station is a mobile telephone station and through the respective maintained communication link of the second telephone station if the second telephone station is a mobile telephone station, only if they are both members of the private network group.

13.(Amended) The apparatus according to claim 12, wherein each of the at least one mobile telephone station and the at least one fixed wire telephone station has a corresponding node registration;

Q³ wherein the means for grouping at least two telephone station of the at least one mobile telephone station and the at least one fixed wire telephone station as members of a private network group comprises means for listing the node registrations of the at least two telephone stations within a private network group table; and

wherein the means for determining if the first and second telephone stations are both members of the private network group comprises means for determining if the node registrations of the first and second telephone stations are both listed within the private network group table.

14.(Amended) The apparatus according to claim 13, wherein the node registration for the mobile telephone station of the first set is a Home Location Registration (HLR) corresponding to the mobile telephone station of the first set.

15.(Amended) The apparatus according to claim 13, wherein the node registration for the fixed wire telephone station of the second set is a data address corresponding to a second apparatus coupled to the fixed wire telephone station.

16.(Amended) The apparatus according to claim 13, wherein the means for enabling

- 7 -

communication of the data unit from the first telephone station to the second telephone station comprises means for attaching a header to the data unit, the header comprising a data address corresponding to a second apparatus coupled to the second telephone station as a destination address; and means for outputting a resulting data unit to a data network for routing.

17.(Amended) The apparatus according to claim 15, wherein the data address corresponding to the second apparatus is an Internet Protocol (IP) address.

18.(Amended) The apparatus according to claim 16, wherein the second apparatus is a server coupled to a Local Area Network (LAN).

Q³ 19.(Amended) The apparatus according to claim 13, wherein each of the at least one mobile telephone station and the at least one fixed wire telephone station further has a corresponding data address and the data unit includes a data address corresponding to a desired destination mobile station as a destination address;

wherein the means for grouping at least two telephone stations of the at least one mobile telephone station and the at least one fixed wire telephone station as members of a private network group further comprises means for listing the data addresses of the at least two telephone stations within the private network group table corresponding to their node registrations; and

wherein the means for determining if the first and second telephone stations are both members of the private network group further comprises means for determining the node registration of the second telephone station by looking-up the destination address of the data unit within the private network group table.

20.(Amended) The apparatus according to claim 19, wherein the data addresses are Internet Protocol (IP) addresses.

21.(Amended) The apparatus according to claim 12 further comprising means for determining if the data unit is of a type requiring limited access, and means for enabling communication of the data unit from the first telephone station to the second telephone station if the data unit is not of

- 8 -

the type requiring limited access, even if the first and second telephone stations are not both members of the private network group.

22.(Amended) A private network comprising a data network, a plurality of apparatus coupled to the data network, and a plurality of sets of at least one telephone station which are arranged to maintain communication links with a respective one of the apparatus;

Q3 wherein each of the apparatus comprises means for grouping at least two of the plurality of telephone stations as members of a private network group; means for determining if a first telephone station that maintains a communication link of the communication links with a first one of the plurality of apparatus and is sending a data unit, and a second telephone station that maintains a communication link of the communication links with a second one of the plurality of apparatus and is scheduled to receive the data unit are both members of the private network group; and means for enabling communication of the data unit from the first telephone station, via the data network, to the second apparatus only if the first and second telephone stations are both members of the private network group.

23.(Amended) The private network according to claim 22, wherein each of the telephone stations within the private network group has a corresponding node registration;

wherein the means for grouping at least two of the plurality of telephone stations as members of a private network group comprises means for listing the node registrations of the at least two telephone stations within a private network group table; and

wherein the means for determining if the first and second telephone stations are both members of the private network group comprises means for determining if the node registrations of the first and second telephone stations are both listed within the private network group table.

24.(Amended) The private network according to claim 23, wherein first and second ones of the plurality of sets of at least one telephone station comprises first and second sets of mobile

- 9 -

stations respectively that are located within respective first and second cell clusters, the first and second sets being coupled to the first and second ones of the plurality of apparatus;

wherein, within the first apparatus, the node registrations corresponding to the mobile stations of the first set are respective Home Location Registrations (HLRs) and the node registrations corresponding to the mobile stations of the second set are a data address corresponding to the second apparatus; and

wherein, within the second apparatus, the node registrations corresponding to the mobile stations of the second set are respective HLRs and the node registrations corresponding to the mobile stations of the first set are a data address corresponding to the first apparatus.

a³ 25.(Amended) The private network according to claim 22, wherein the means for enabling communication of the data unit from the first telephone station to the second apparatus comprises means for attaching a header to the data unit, the header comprising a data address corresponding to the second apparatus as a destination address; and means for outputting a resulting data unit to a data network for routing.

26.(Amended) The private network according to claim 22, wherein at least one of the plurality of apparatus is an intelligent peripheral coupled within a third generation wireless network.

27.(Amended) The private network according to claim 22, wherein at least one of the plurality of apparatus is a server coupled to a Local Area Network (LAN).

28.(Amended) A wireless network comprising an apparatus, a radio network controller coupled to the apparatus, at least one base transceiver station coupled to the radio network controller, and a plurality of mobile stations each having a respective maintained a communication link with one of the at least one base transceiver station;

wherein the apparatus comprises means for grouping at least two of the plurality of mobile stations as members of a private network group; means for determining if a first mobile station sending a data unit and a second mobile station scheduled to receive the data unit

- 10 -

are both members of the private network group; and means for enabling communication of the data unit from the first mobile station to the second mobile station through the respective maintained communication links of the first mobile station and the second mobile station only if they are both members of the private network group.

29.(Amended) The wireless network according to claim 28, wherein the radio network controller comprises means for adjusting a bandwidth between each of the mobile stations and its respective one of the at least one base transceiver station.

30.(Amended) The wireless network according to claim 28 further comprising a mobile switching center coupled between the apparatus and the radio network controller, the mobile switching center comprising means for controlling the switching operations of the wireless network within a predefined cell cluster.

31.(Amended) The wireless network according to claim 28, wherein at least one of the mobile stations comprises a personal computer with a wireless modem.

32.(Amended) The wireless network according to claim 28, wherein at least one of the mobile stations comprises an interface apparatus arranged to be coupled to a digital data processing component and arranged to maintain a communication link with one of the at least one base transceiver station, the interface apparatus comprising:

an interface port comprising means for receiving digital data in a first format from the digital data processing component, means for converting the digital data from the first format to a second format, and means for outputting the digital data in the second format;

a computing device, coupled to the interface port, comprising means for receiving the digital data in the second format from the interface port; means for attaching a data unit overhead including source and destination addresses to the received digital data in order to generate the data unit, the source address being a predefined data address for the interface apparatus and the destination address being a stored data address; and means for outputting the

- 11 -

data unit; and

a wireless network transceiver, coupled to the computing device, comprising means for receiving the data unit and means for transmitting it to the base transceiver station.

33.(Amended) The interface apparatus according to claim 32, wherein the component interface port is a Universal Serial Bus (USB) port and the first format is a format required for transmitting the digital data over a USB cable.

34.(Amended) The wireless network according to claim 28, wherein at least one of the plurality mobile stations comprises an interface apparatus arranged to be coupled to a digital data processing component and arranged to maintain a communication link with one of the at least one base transceiver station, the interface apparatus comprising:

a wireless network transceiver comprising means for receiving the data unit from the base transceiver station, with the data unit comprising digital data in a first format and a data unit overhead including source and destination addresses, the destination address being a predefined data address for the interface apparatus, and means for outputting the data unit;

a computing device, coupled to the wireless network transceiver, comprising means for receiving the data unit from the wireless network transceiver, means for removing the data unit overhead from the data unit, and means for outputting the digital data in the first format; and

a component interface port, coupled to the computing device, comprising means for receiving the digital data in the first format, means for converting the received digital data from the first format to a second format, and means for outputting the digital data in the second format to the digital data processing component.

35.(Amended) The interface apparatus according to claim 34, wherein the component interface port is a Universal Serial Bus (USB) port and the second format is a format required for transmitting the digital data over a USB cable.